

## CLAIMS:

1. A three electrode Plasma Display Panel comprising:
  - a matrix of plasma cells being associated with intersections of data electrodes crossing substantially parallel arranged first and second scan electrodes, two adjacent ones of said first and second scan electrodes being associated with the same plasma cells,
  - a scan driver for supplying a substantially sine wave shaped voltage between said first and second scan electrodes, an amplitude of the substantially sine wave shaped voltage being large enough to sustain plasma cells already ignited, but being not large enough to ignite the plasma cells, and
  - 10 a data driver for supplying a substantially pulse shaped voltage to the data electrodes for controlling an amount of light produced by the plasma cells.
2. A three electrode Plasma Display Panel as claimed in claim 1, characterized in that the Plasma Display Panel further comprises a controller for controlling the data driver to supply the substantially pulse shaped voltage at substantially the instant the substantial sine wave shaped voltage has:
  - (i) an extreme value for activating a first level of light output, or
  - (ii) a zero crossing for activating a second level of light output.
- 20 3. A three electrode Plasma Display Panel as claimed in claim 1, characterized in that the first and second scan electrodes extend in the row direction and the data electrodes extend in the column direction, the Plasma Display Panel further comprises a controller for controlling the scan driver to superpose a scan pulse voltage on the substantial sine wave shaped voltage during the occurrence of the substantially pulse shaped voltage for not selected rows of plasma cells, an amplitude and polarity of the scan pulse voltage being selected to prevent a change of charge of the plasma cells of the not selected rows of plasma cells due to the substantially pulse shaped voltage present on the data electrodes.

4. A three electrode Plasma Display Panel as claimed in claim 1, characterized in that the first and second scan electrodes extend in the row direction and the data electrodes extend in the column direction, the Plasma Display Panel further comprises a controller for controlling the scan driver to superpose a scan pulse voltage on the substantial sine wave shaped voltage during the occurrence of the substantially pulse shaped voltage for a selected row of plasma cells, an amplitude and polarity of the scan pulse voltage being selected to allow a change of charge of the plasma cells of the selected row of plasma cells by the substantially pulse shaped voltage present on data electrodes, an amplitude of the scan pulse voltage being selected low enough to prevent a change of charge of plasma cells of not 10 selected rows of plasma cells.

5. A three electrode Plasma Display Panel as claimed in claim 1, characterized in that the scan driver is adapted for supplying a first substantially sine wave shaped voltage to the first scan electrodes, and a second substantially sine wave shaped voltage to the second 15 scan electrodes, the first substantially sine wave shaped voltage and a second substantially sine wave shaped voltage having a phase shift in a range of 120 to 150 degrees.

6. A three electrode Plasma Display Panel as claimed in claim 2, characterized in that the data driver has an input for receiving an input video signal to be displayed by the 20 Plasma Display Panel, the input video signal having a field period, the controller being adapted for controlling the scan driver and/or the data driver

- (i) to ignite all the plasma cells at a start of the field period,
- (ii) to generate a predetermined number of subfields during the field period,

and

25 (iii) to activate the first level of light output or the second level of light output during one of the subfields in dependence on the input video signal.

7. A three electrode Plasma Display Panel as claimed in claim 2, characterized in that the data driver has an input for receiving an input video signal to be displayed by the 30 Plasma Display Panel, the input video signal having a field period, the controller being adapted for controlling the scan driver and/or the data driver

- (i) to turn off all the plasma cells at a start of the field period,
- (ii) to generate a predetermined number of subfields during the field period,

and

(iii) to activate the first level of light output or the second level of light output during the subfields in dependence on the input video signal.

8. A three electrode Plasma Display Panel as claimed in claim 1, characterized in  
5 that the scan driver comprises a resonance inductor and a parallel arrangement of on the one hand a series arrangement of two controllable electronic switches and on the other hand a series arrangement of a first and a second DC power supply voltage, a junction of the two controllable electronic switches being coupled to at least one of the first scan electrodes, a junction of the first and a second DC power supply voltage being coupled to at least one of  
10 the second scan electrodes, the resonance inductor being coupled between the junction of the two controllable electronic switches and the junction of the first and a second DC power supply voltage.

9. A three electrode Plasma Display Panel as claimed in claim 1, characterized in  
15 that the scan driver comprises:

a resonance inductor being coupled between at least one of the first scan electrodes, and at least one of the second scan electrodes,

a controllable electronic switch coupled to the at least one of the first scan electrodes, and

20 a DC power supply voltage coupled to the at least one of the second scan electrodes.

10. A PDP apparatus comprising a Plasma Display Panel as claimed in claim 1.

25 11. A method of driving a three electrode Plasma Display Panel comprising a matrix of plasma cells being associated with intersections of data electrodes crossing parallel arranged first and second scan electrodes, two adjacent ones of said first and second scan electrodes being associated with the same plasma cells, the method

30 supplying a substantially sine wave shaped voltage between said first and second scan electrodes, an amplitude of the substantially sine wave shaped voltage being large enough to sustain plasma cells already ignited, but being not large enough to ignite the plasma cells, and

supplying a substantially pulse shaped voltage to the data electrodes for controlling an amount of light produced by the plasma cells.